Municipality of East Ferris

Report to Council

Report No.: PLAN-2023-08 Date: November 28, 2023

Originator: Greg Kirton, Director of Community Services

Subject: Trout Lake Water Quality Study Update and Next Steps

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RECOMMENDATION

1. That Council accept the following reports and direct staff to initiate an Official Plan Amendment and Zoning By-law Amendment based on their recommendations: "J.L. Richards – Trout Lake Plan Directions Report (June 29, 2022)", "J.L. Richards – Directions Report Addendum (November 2, 2023)" and "Hutchinson Environmental Sciences – Trout Lake Existing Conditions, Issues, Opportunities and Constraints (October 23, 2023)".

BACKGROUND

In May 2021 East Ferris staff, along with City of North Bay and North-Bay Mattawa Conservation Authority (NBMCA) staff, began a process to review the water quality data on Trout Lake. This process was formally led by consultants from J.L. Richards and Hutchinson Environmental Sciences Ltd. The review included numerous public consultation sessions including open houses in both East Ferris and North Bay, a booth at the East Ferris Tradeshow, presentations to both Councils and also individual private stakeholder meetings with groups such as the Trout Lake Conservation Association (TLCA).

The goal of the updated Trout Lake Study is to complete a comprehensive review of the current policies around Trout Lake based on a review of water quality data, planning policy framework and provincial policies and data. A full scale review of Trout Lake policies has not occurred since the City of North Bay studied Trout Lake in 1992 with their "Trout Lake Watershed Management Study and a Trout Lake Pollution Control Plan, Limnology and Analysis" plan. Many of the planning policies in East Ferris also have roots in the results of this plan.

The Province of Ontario did study Trout Lake in 2018 through a study done by the Ministry of Environment & Climate Change, Eastern Region Technical Support Section. This "Lake Capacity Assessment" concluded that the provincial model was not able to be used reliably as a planning tool. The model did not predict outcomes within acceptable limits and could not be used to predict development limits.

Specifically, the provincial report states that "the phosphorus model does not predict within acceptable limits for Four Mile Bay or Trout Lake (Main Basin), as it over-predicts the spring overturn concentrations by greater than 20% of measured values. As such the model cannot be used as a planning tool to predict a background concentration (to set a background plus 50% objective), and therefore it cannot be used to estimate an upper limit for development" (Lake Capacity Assessment; Trout Lake, p.14, 2018).

The report further states that "In the future, the Ministry may be open to considering a very limited release of new development lots for Trout Lake. The decision to allow or not allow new shoreline development lots will be based on a rigorous review of the long-term measured water quality data and a detailed statistical analysis of trends by the Ministry" (Lake Capacity Assessment: Trout Lake, p. 15, 2018).

Through the comprehensive review of the data, Hutchinson Environmental Sciences was able to make the necessary adjustments to the model to accurately predict outcomes in line with measured values. The adjustments were made based on things like observed phosphorus attenuation rates from peer reviewed scientific data. The conclusions of the Hutchinson report go into greater detail with regards to the modelling.

J.L. Richards built on the data produced by Hutchinson Environmental to make multiple recommendations about potential policy changes that would be appropriate given the outcomes of the report. These policy changes include amendments to best practices for development on the shoreline of Trout Lake, the inflowing streams and back lot developments.

A cautious approach was used in reviewing development capacity for Trout Lake. The proposed potential number of lots that could be created sits at 20% of what the modelled capacity is. Neither the consulting team nor staff deemed it appropriate to recommend development targets that were at or near the theoretical capacity of the lake. By using a very conservative figure it allows for the opportunity to review the data again in the near future to reassess and confirm modelling accuracy as well as get a better understanding of things like climate change that involve potential impacts with some uncertainty associated with them.

It's important to note that additional lot development potential represents development opportunities both on the lake as well as on major inflowing streams within the watershed. In East Ferris, despite the theoretical capacity for total lot development, the physical constraints (lot frontage/area and layout of existing lots) mean that there are only candidates for 4 additional lots to be developed directly on Trout Lake.

Between the J.L. Richards Report and the Hutchinson Environmental Report there are 28 recommendations that would improve the current policy regime for Trout Lake. Those recommendations are included in each background report and are as follows:

J.L. Richards Report:

1. Include guiding policies on climate change and its associated impacts regarding Trout Lake in both the North Bay and East Ferris Official Plans.
2. Implement a hybrid approach to the Municipal Water Quality Objective (MWQO) by updating the MWQO for the Trout Lake Main Basin to 5.64 µg/L of TP and maintain the existing MWQO of 7.0 µg/L of TP for the Four Mile Basin in both the North Bay and East Ferris Official Plans.
3. Remove all reference and prohibitions on lot creation associated with the 300 metre setback from Trout Lake within the North Bay and East Ferris Official Plans.
4. Implement a Trout Lake Influence Area Overlay within the North Bay and East Ferris Official Plan, which would apply to all lands within 300 metres of the shoreline, islands, major inflowing streams and Four Mile Lake.
5. Permit a limited number of new lots to be created in the Trout Lake Influence Area, subject to best management practices. This includes 83 lots in the Main Basin (50 in North Bay and 33 in East Ferris) and up to 20 lots in Four Mile Bay.
6. Require development on existing, vacant legal lots of record to conform to updated development standards (e.g. setbacks and vegetative buffers) and best management practices.
7. Implement parameters in both the North Bay and East Ferris Official Plans and Zoning By-laws to permit limited expansions of non-complying buildings and structures, as of right and subject to best management practices.
8. Expand the policies in the North Bay Official Plan regarding legal non-conforming minor variance applications to require administrative best practices be implemented on all minor variance applications and implemented through Site Plan Control.
9. Include guidance on minor variance applications for legal nonconforming or complying uses to the East Ferris Official Plan. (Note: North Bay's Official Plan policy already includes this guidance.)
10. Require that all lots within the Trout Lake Influence Area Overlay be subject to Site Plan Control and establish site plan control applications requirements within the Official Plans for both North Bay and East Ferris.
11. Establish consistent best management practices to be used in the site plan process in the North Bay and East Ferris Official Plans.
12. Continue to prohibit Additional Residential Units in the study area.
13. Permit sleep cabins, subject to site plan control and best management practices on waterfront lots. Establish sleep cabin development controls in the zoning by-laws for North Bay and East Ferris. (Note: Sleep cabins sometimes referred to as guest cabins or bunkies are not considered a dwelling unit-they are accessory buildings used for temporary sleeping purposes.)

Hutchinson Environmental Report:

1. Increase the parameter list for samples collected in Trout Lake to include emerging limnological issues (calcium and chloride) and explanatory variables (total suspended solids, dissolved organic carbon and phytoplankton).
2. Implement a consistent sampling methodology, increase Quality Accuracy/Quality Control (QA/QC) procedures such as the collection of duplicate samples, and continue to use a water quality laboratory with a proven track record of delivering consistent low level TP results such as the Dorset Environmental Science Centre which has been utilized since 2013.
3. Expand the water quality monitoring program to include inflowing tributaries and complete mass balance modelling to determine the phosphorus reduction efficiencies of each watercourse which can be used to help inform management decisions.
4. Complete a thorough review of dissolved oxygen data that has been collected and develop a standardized and repeatable approach for collecting suitable data and calculating Mean Volume Weighted Hypolimnetic Disolved Oxygen (MVWHDO) concentrations in Four Mile Bay, Trout Lake – Main Basin, Turtle Lake and Lake Talon. NBMCA completed a thorough analysis of MVWHDO in 2018 in Trout Lake so that approach should be reviewed to determine if it can be adopted as a standardized assessment approach.
5. Complete and distribute annual monitoring reports to the City of North Bay and East Ferris and include comparisons of data to Municipal and Provincial Water Quality Objectives to provide an ongoing dataset to inform planning policy.
6. Develop a Lakeshore Capacity Model (LCM) and dissolved oxygen model for each of Turtle Lake and Lake Talon to quantify the impact of increased Total Phosphorous (TP) loads associated with the three development scenarios on TP concentrations and MVWHDO concentrations in Turtle Lake and Lake Talon. Combine the findings with updated MVWHDO evaluations in Turtle Lake and Lake Talon (Recommendation #4) and other available monitoring data to better determine downstream impacts.
7. Sampling at Sites 2625 and 2685 should be reinitiated to establish the effectiveness of those septic systems.
8. Examine the septic system monitoring results as they are received so that immediate corrective action can be taken in the event of missing samples or anomalous results.
9. Follow up on the results for those systems not averaging at least 93% phosphorus removal by conducting more sampling and/or installing an additional piezometer at the furthest downgradient point in the tile field. (Note: For Minimum Impact Lots only)
10. Develop a septic inspection program that provides a better understanding of system functionality than visual observations of obvious system failures, such as inspections completed during home inspections.
11. Complete a thorough septic inspection on any short-term rentals to determine if the system can adequately treat wastewater generated by such uses.
12. Develop a comprehensive and fulsome list of Best Management Practices (BMPs) and development standards that are automatically applied to all waterfront development

applications so that a protective approach to development is implemented as part of all waterfront developments.

13. Complete a review of septic system technologies such as the EcoFlo Biofilter and Waterloo Biofilter, and soil requirements for leaching bed systems that have proven to attenuate phosphorus (e.g. 1% acid-extractable concentrations of iron and aluminum [MOE 2010]) to determine appropriate sewage system requirements that will minimize impacts on Trout Lake.
14. An influx of new residents that value manicured lawns and are not familiar with waterfront BMPs and lake stewardship could negatively impact Trout Lake. Regulatory BMPs on existing and future development should be encouraged through education, stewardship and enforcement.
15. Repeat the Trout Lake Management Study in the near future (e.g. 3-5 years) to assess the health of Trout Lake in response to ongoing climate change, effectiveness of BMPs, and progress related to the Recommendations provided here-in, utilizing any new updated lake capacity tools, so that appropriate changes to planning policy can be developed and implemented.

The next step in the process is to incorporate the recommendations that have been made into policy and regulations. This will require an Official Plan Amendment and Zoning By-law Amendment process that will produce detailed policy that will go forward to the Planning Advisory Committee and Council for review and decision. This will be a complete public process that is consistent with *Planning Act* requirements and will allow for further public engagement at all steps of the process.

OPTIONS

1. Option 1

   That Council accept the following reports and direct staff to initiate an Official Plan Amendment and Zoning By-law Amendment based on their recommendations: "J.L. Richards – Trout Lake Plan Directions Report (June 29, 2022)", "J.L. Richards – Directions Report Addendum (November 2, 2023)" and "Hutchinson Environmental Sciences – Trout Lake Existing Conditions, Issues, Opportunities and Constraints (October 23, 2023)".

   This option is recommended because it allows staff to move forward with updating our planning documents to be in line with the most up to date information available related to Trout Lake.

2. Option 2

That Council accept the following reports but direct staff to take no action on policy changes: "J.L. Richards – Trout Lake Plan Directions Report (June 29, 2022)", "J.L. Richards – Directions Report Addendum (November 2, 2023)" and "Hutchinson Environmental Sciences – Trout Lake Existing Conditions, Issues, Opportunities and Constraints (October 23, 2023)".

This option is not recommended because it would result in policies not being amended to reflect updated best management practices for Trout Lake. Further, the lack of amendments to lot creation policies leaves the municipality open to Ontario Land Tribunal challenges for individual development applications.

FINANCIAL IMPLICATIONS

Financial implications would include staff time associated with policy development and subsequent meetings. All costs associated with the consulting team for this project have been paid through past budget processes that were approved by Council.

RECOMMENDATION

It is recommended that Council accept the following reports and direct staff to initiate an Official Plan Amendment and Zoning By-law Amendment based on their recommendations: "J.L. Richards – Trout Lake Plan Directions Report (June 29, 2022)", "J.L. Richards – Directions Report Addendum (November 2, 2023)" and "Hutchinson Environmental Sciences – Trout Lake Existing Conditions, Issues, Opportunities and Constraints (October 23, 2023)".

Respectfully Submitted,

Greg Kirton, RPP, MCIP
Director of Community Services

I concur with this report,
and recommendation

Jason H. Trottier, BBA, CPA, CMA
CAO/Treasurer

Attachments:
J.L. Richards – Trout Lake Plan Directions Report (June 29, 2022)
J.L. Richards – Directions Report Addendum (November 2, 2023)
Hutchinson Environmental Sciences - Trout Lake Existing Conditions, Issues, Opportunities and Constraints (October 23, 2023)